

# DATA ITEM DESCRIPTION

<b>1. TITLE</b>  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">SOFTWARE QUALITY ASSURANCE PLAN (SQAP)</div>		<b>2. IDENTIFICATION NUMBER</b>  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">DID-FAA-026-23</div>	
<b>3. DESCRIPTION/PURPOSE</b>  <p>3.1 The Software Quality Assurance Plan (SQAP) describes Software Quality Assurance activities for software intensive projects.</p> <p>3.2 The SQAP defines the SQA processes to be followed, the methods to be used, the approach to be followed for providing assurance that software processes and products conform to specified plans and requirements.</p>			
<b>4. APPROVAL DATE (YYMMDD)</b>  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">August 11, 2000</div>	<b>5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)</b>  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">AIO-2/ASU-500</div>	<b>6a. DTC APPLICABLE</b>  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">N/A</div>	<b>6b. GIDEP APPLICABLE</b>  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">N/A</div>
<b>7. APPLICATION/INTERRELATIONSHIP</b>  <p>7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by specific and discrete task requirements as delineated in the contract.</p> <p>7.2 This DID is used when the contractor is tasked to develop and record plans for conducting Software Quality Assurance activities.</p> <p>7.3 The Contract Data Requirements List (CDRL) (DD 1423 or equivalent) should specify whether deliverable data are to be delivered on paper or electronic media; are to be in a given electronic form (such as ASCII, or compatible with a specified word processor or other support software); may be delivered in developer format rather than in the format specified herein; and may reside in a computer-aided software engineering (CASE) or other automated tool rather than in the form of a traditional document.</p>			
<b>8. APPROVAL LIMITATION</b> <div style="text-align: center; font-weight: bold; font-size: 1.2em;">NONE</div>	<b>9a. REFERENCES</b> <div style="text-align: center; font-weight: bold; font-size: 1.2em;">FAA-STD-026</div>		<b>9b. AMSC NUMBER</b> <div style="text-align: center; font-weight: bold; font-size: 1.2em;">N/A</div>
<b>10. PREPARATION INSTRUCTIONS</b>  <p>10.1 <u>General instructions.</u></p> <p>a. <u>Automated techniques.</u> Use of automated techniques is encouraged. The term "document" in this DID means a collection of data regardless of its medium.</p> <p>b. <u>Alternate presentation styles.</u> Diagrams, tables, matrices, and other presentation styles are acceptable substitutes for text when data required by this DID can be made more readable using these styles.</p> <p style="text-align: right;"><i>(Continued on Page 2)</i></p>			
<b>11. DISTRIBUTION STATEMENT</b>  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">DISTRIBUTION STATEMENT: Approved for public release; distribution is unlimited.</div>			

## PREPARATION INSTRUCTIONS: 10.1 General Instructions (continued)

- c. Title page or identifier with signature blocks. The document shall include a title page containing, as applicable: document number; volume number; version/revision indicator; security markings or other restrictions on the handling of the document; date; document title; name, abbreviation, and any other identifier for the system, subsystem, or item to which the document applies; contract number; CDRL item number; organization for which the document has been prepared; name and address of the preparing organization; distribution statement; and signature blocks for the developer representative authorized to release the document, the acquirer representative authorized to approve the document, and the dates of release/approval. For data in a database or other alternative form, this information shall be included on external and internal labels or by equivalent identification methods.
- d. Table of contents. The document shall contain a table of contents providing the number, title, and page number of each titled paragraph, figure, table, and appendix. For data in a database or other alternative form, this information shall consist of an internal or external table of contents containing pointers to, or instructions for accessing, each paragraph, figure, table, and appendix or their equivalents.
- e. Page numbering/labeling. Each page shall contain a unique page number and display the document number, including version, volume, and date, as applicable. For data in a database or other alternative form, files, screens, or other entities shall be assigned names or numbers in such a way that desired data can be indexed and accessed.
- f. Response to tailoring instructions. If a paragraph is tailored out of this DID, the resulting document shall contain the corresponding paragraph number and title, followed by "This paragraph has been tailored out." For data in a database or other alternative form, this representation need occur only in the table of contents or equivalent.
- g. Multiple paragraphs and subparagraphs. Any section, paragraph, or subparagraph in this DID may be written as multiple paragraphs or subparagraphs to enhance readability.
- h. Standard data descriptions. If a data description required by this DID has been published in a standard data element dictionary specified in the contract, reference to an entry in that dictionary is preferred over including the description itself.
- i. Substitution of existing documents. Commercial or other existing documents may be substituted for all or part of the document if they contain the required data.

10.2 Content requirements. Content requirements begin on the following page. The numbers shown shall designate the paragraph numbers to be used in the document.

PREPARATION INSTRUCTIONS: 10.2 Content Requirements (continued)

- 10.2.1 Scope. This section shall identify the software and related documentation to which the SQAP applies. It shall also identify any support software necessary for the development of the government product. The paragraph shall begin with the following sentence: "This document describes the Software Quality Assurance Plan to be used throughout the life-cycle of the program including necessary documentation for contract XXXXX (insert title). This plan is also applicable to support software necessary for the design, development and delivery of the product. "
- 10.2.2 Referenced Documents. This paragraph shall list all documents referenced in the SQAP by document number, title, revision, and date. All documents referenced in the plan shall be available for government review.
- 10.2.3 Overview of SQA Activities. This paragraph shall be divided into subsections as needed to establish the context for the planning described in later sections. The planning shall cover all contractual clauses regarding the identified topics. It shall include, as applicable, an overview of:
- a. Requirements and constraints on the system and software to be developed or used to support the program.
  - b. Software Quality Assurance Milestone chart which identifies the program SQA/Software Quality Engineering (SQE) required activities by program life cycle phase, including formal reviews and audits.
  - c. Other requirements and constraints, such as on project security, privacy, methods, standards, interdependencies in hardware and software development, etc.
- 10.2.3.1 Detailed description of planned SQA/SQE activities: This paragraph shall include a detailed description of the SQA/SQE activities to be performed during the software development life cycle. Describe the responsibilities and authorities for accomplishing the planned software quality assurance activities. Identify the required coordination of software quality assurance activities with other activities of the project. Identify the tools and the physical and human resources required for the execution of the plan. The SQA/SQE activities and tasks shall be mapped onto the appropriate life-cycle model.
- 10.2.3.2 Software Product Assurance. This paragraph and its subparagraphs shall describe the approach to be followed for software product assurance, including audits and reporting.
- 10.2.3.2.1 Assure that plans and related documents comply with the contract requirements and are mutually consistent.
  - 10.2.3.2.2 Assure that the software products to be delivered have fully satisfied their contractual requirements and are acceptable to the acquirer.
- 10.2.3.3 Software Process Assurance. This paragraph and its subparagraphs shall describe the approach to be followed for software process assurance, including audits and reporting.
- 10.2.3.3.1 Assure that the software life-cycle processes, and supporting processes comply with the contract requirements, including ISO 9001 (if applicable), adhere to project plans and are executed as required.
  - 10.2.3.3.2 Assure that prime contract requirements are passed down to the subcontractor.
  - 10.2.3.3.3 Verify that internal engineering practices, development environment, test environment, and libraries comply with approved processes and contract requirements.

PREPARATION INSTRUCTIONS: 10.2 Content Requirements (continued)

10.2.3.3.4 Verify that metrics for software processes and products are captured and tracked in accordance with established plans and procedures.

10.2.3.3.5 Assure that the assigned staff have the required skills and are properly trained to meet the project requirements.

10.2.3.4 Problem resolution. This paragraph shall describe the approach to be followed for problem resolution, including a description of the problem/change report process and items to be recorded. Candidate items include project name, originator, problem number, problem name, software element or document affected, origination date, category and priority, description, analyst assigned to the problem, date assigned, date completed, analysis time, recommended solution, impacts, problem status, approval of solution, follow-up actions, corrector, correction date, version where corrected, correction time, description of solution implemented.

10.2.3.5 Joint technical and management reviews. This paragraph shall describe the entry and exit criteria required by SQE for joint technical and management reviews.

10.2.3.6 Other SQA/SQE activities. This paragraph shall be describe those activities associated with SQE in the following process areas:

- a. Risk management, including potential risks and corresponding handling strategies,
- b. Software management indicators, including indicators to be used,
- c. Computer Security,
- d. Subcontractor management,
- e. Interface with software independent verification and validation (IV&V) agents,
- f. Coordination with associate developers, and
- g. Improvement of project processes.

10.2.3.7 Project organization. This paragraph shall describe the relationship of the SQE organization to the overall project organizational structure, including the organizations involved, their relationships to one another, and the authority and responsibility of each organization for carrying out required activities. This section shall include a description of the mechanism used to ensure the ability to perform objective evaluations and effect problem resolution.

10.2.3.8 Other required resources. This paragraph shall describe a plan for obtaining other required resources, dates needed, and availability of each resource item.

10.3 APPENDIX A - Appendix A shall contain a list of Definitions, Acronyms, & Abbreviations

10.4 APPENDIX B - Appendix B shall provide a "mapping" of the requirements of this plan to contractor internal procedures.